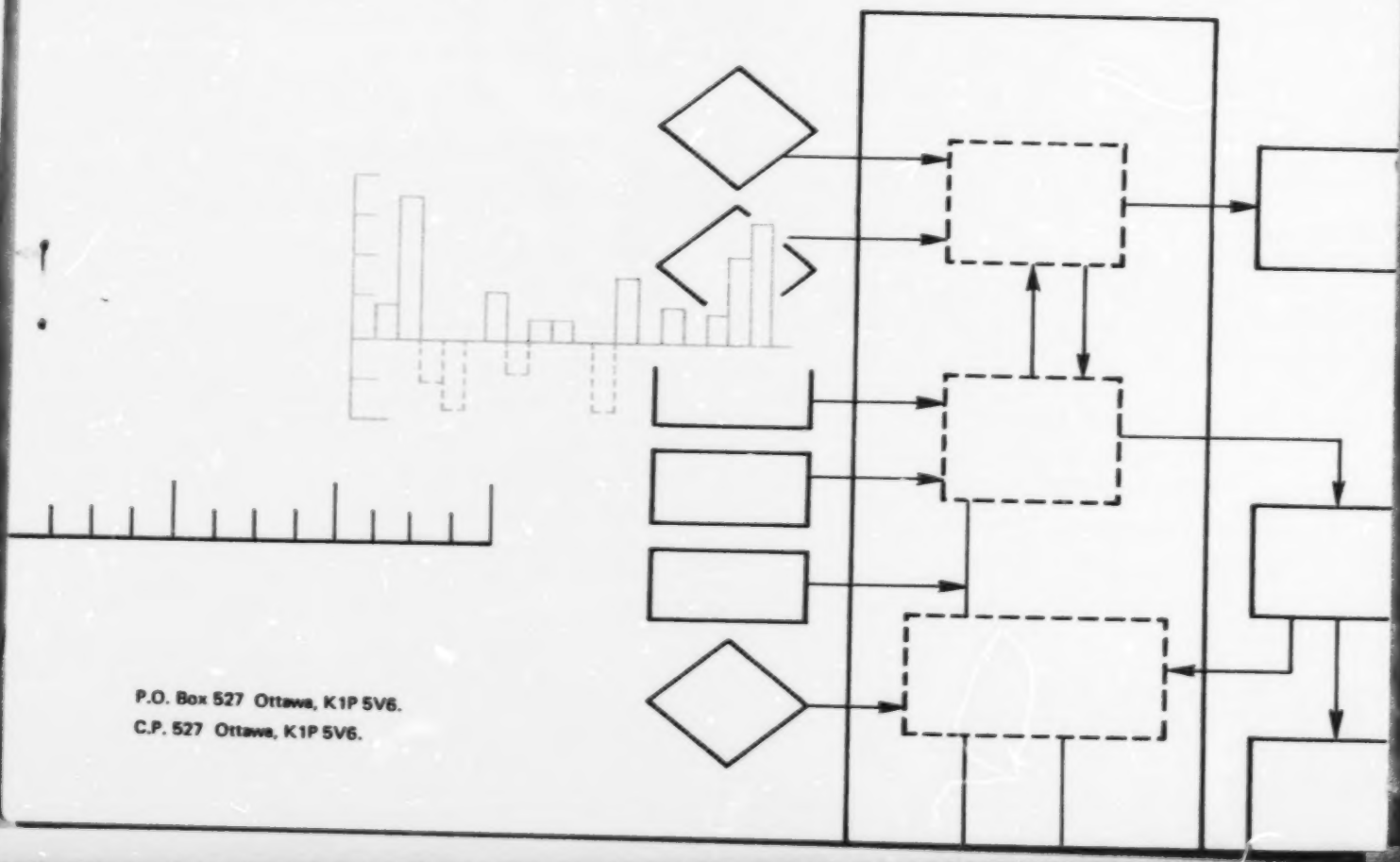
A paper prepared for the

Economic Council of Canada

Un document préparé pour le

Conseil économique du Canada



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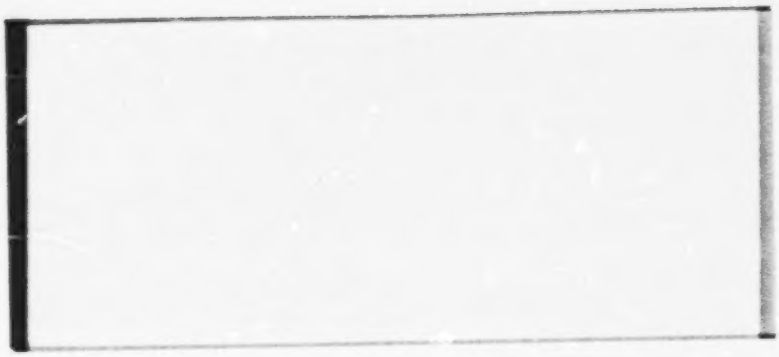

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DISCUSSION PAPER NO. 211

The Comparative Size of the Federal and Provincial Budgets and Economic Stabilization

by Pierre Fortin*

*The author is indebted to David Sewell, Neil Swan and Richard Zuker for their suggestions and comments. He also wishes to thank the Economic Council of Canada and the Social Sciences and Humanities Research Council of Canada for their financial support.

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ISSN-0225-8013

February 1982

Résumé

Ce texte examine les relations entre la taille des budgets fédéraux et provinciaux, la capacité auto-stabilisatrice de l'économie, et la facilité d'intervention discrétionnaire du gouvernement fédéral. Trois conclusions majeures émergent de l'analyse.

Premièrement, la croissance tendancielle du budget global en proportion du PNB et l'augmentation du taux marginal de taxation et de transfert au niveau fédéral ont amélioré la stabilité intrinsèque de l'économie et réduit l'importance, dans le budget fédéral, des mesures discrétionnaires exigées par l'état de la conjoncture, et ce malgré la diminution des dépenses fédérales en biens et en services depuis 25 ans.

Deuxièmement, la croissance encore plus rapide des dépenses provinciales en proportion du PNB et leur financement accru à partir des impôts directs ont renforcé, et non affaibli, la stabilité conjoncturelle inhérente de l'économie et ont facilité la tâche régulatrice discrétionnaire du gouvernement fédéral. Les dépenses provinciales n'ont pas manifesté de sensibilité systématique et significative à l'état de la conjoncture.

Troisièmement, le transfert de champs fiscaux du niveau fédéral au niveau provincial en échange de responsabilités provinciales de dépense accrues est essentiellement sans effet sur la stabilité conjoncturelle de l'économie. S'il s'agit d'une décentralisation de dépenses de nature peu flexible, comme celles qui visent les "programmes établis" et le Régime d'assistance publique du Canada, la flexibilité conjoncturelle du budget fédéral n'en est guère affectée. Dans le cas de dépenses de nature plus flexible, comme les dépenses d'immobilisation, la marge de manoeuvre conjoncturelle du budget fédéral se rétrécit, ce qui appelle une coopération intergouvernementale plus grande en matière de régulation conjoncturelle.

Abstract

This paper examines the relationships between the size of the federal and provincial budgets, the economy's ability to stabilize itself and the federal government's ease of discretionary intervention. Three major conclusions emerge from the analysis.

First, the tendency of the total budget to grow as a proportion of GNP, and the increase in the marginal rates of taxation and transfer at the federal level have increased the intrinsic stability of the economy. They have also reduced the importance in the federal budget of discretionary measures required for economic stability despite the drop in federal expenditures on goods and services over the last 25 years.

Second, the even faster growth of provincial expenditures as a proportion of GNP, and their increased financing through direct income taxes have reinforced rather than weakened the built-in stability of the economy and have facilitated the federal government's task of discretionary stabilization policy. Provincial expenditures have shown no systematic or significant sensitivity to the swings of the business cycle.

Third, the transfer of tax fields from Ottawa to the provinces in exchange for the provinces taking on more spending responsibilities essentially has no effect on the cyclical stability of the economy. If the decentralization involves fairly inflexible expenditures, such as those for Established Programs Financing or the Canada Assistance Plan, the cyclical flexibility of the federal budget will hardly be affected. In the case of more flexible expenditures, such as capital spending, the federal budget's cyclical flexibility is reduced, thus requiring greater intergovernmental cooperation in the design of stabilization policy.

In 1940, the Report of the Royal Commission on Dominion-Provincial Relations (the Rowell-Sirois Commission) launched the central debate on the link between the effectiveness of federal budgetary policy in regulating the economy and the degree of decentralization in the Canadian federation. Following in the footsteps of the report, the 1945 White Paper on Employment and Income revealed that the federal government was embracing the Keynesian doctrine on the necessity of the central government becoming large enough to effectively influence employment and the level and distribution of national income. This was used to justify both the postwar continuation of the increased importance federal expenditures had taken on in the economy during the Second World War and the financing of these expenditures primarily through an increase in direct income taxes, which are extremely sensitive to the business cycle.

Size of the Federal Budget and Economic Stabilization: Two Propositions

The argument can be clarified with the aid of a simple (constant price) model of the economy:[1]

(1) $D = D_o + \delta Y_d$ (total private demand function)

(2) $Y_d = Y + R - T$ (definition of private disposable income)

(3) $T = T_o + \tau Y$ (taxation function)

(4) $R = R_o - \rho Y$ (transfer function)

(5) $Y = D + G$ (market equilibrium of goods and services)

where:

D	=	total private demand
D_o	=	autonomous private demand (insensitive to short-term variations in income)
δ	=	marginal propensity to spend, private sector
Y_d	=	private disposable income
Y	=	national income
T	=	income taxes
R	=	government transfers to the private sector
T_o	=	autonomous taxation
R_o	=	autonomous transfers
τ	=	marginal taxation rate
ρ	=	marginal transfer rate
G	=	public expenditures on goods and services

The government here includes only the federal level; the provincial level is included in the "private sector". Developed as a system for determining the five endogenous variables D, Y_d, Y, T and R, these five equations provide the equilibrium value of national income:

$$(6) \quad Y = \mu\,(D_o - \delta T_o + \delta R_o + G), \text{ where } \mu = \frac{1}{1 - \delta(1-\tau-\rho)}$$

is the traditional Keynesian multiplier.

The logarithmic differentiation of Y in relation to D_o thus gives national income elasticity in relation to autonomous demand:

(7) $\varepsilon(Y,D_o) = \mu\ D_o/Y$

Equation (7) illustrates that in the absence of discretionary budget intervention, i.e. for constant levels of G, T_θ, R_θ, τ and ρ, the percentage variation in employment and income brought about by a given (percentage) change in autonomous private demand is a decreasing function of the marginal taxation (τ) and transfer(ρ) rates and of the relative importance of government purchases of goods and services (G/Y).

The demonstration of this proposition is immediate. First, as τ and ρ increase, μ obviously decreases. Second, D_θ/Y must vary inversely to G/Y. To understand this, note that private disposable income, based on (2), can be written:

(7) $Y_d = Y + R - T = Y - G - S$

where S = the government's budget balance. Insertion of (7) in (1), and of the result in (4), gives:

(8) $D_\theta/Y = (1-\delta)\ (1-G/Y) + \delta S/Y.$

This equation demonstrates that for any rule of budget equilibrium or disequilibrium that sets the average level of the balance as a proportion of GNP (S/Y) during the business cycle, the relative level of autonomous private demand (D_θ/Y) will in fact be a decreasing function of the relative level of government

expenditures on goods and services (G/Y). The implication of this result is that the size of the government as measured by the relative importance of its purchases of goods and services acts as an automatic economic stabilizer in the same way as the marginal rate of net taxation.

The second major proposition concerning the link between the size of the government and the effectiveness of fiscal policy focuses on discretionary measures. It is stated as follows: the larger expenditures on goods and services and the government's total budget are in relation to GNP, the less the importance in the budget of any discretionary measure designed to exactly offset the effect on national income of a given disturbance (in per cent) of autonomous private demand. There are two reasons for this proposition. First, as we have just demonstrated, the larger the share in GNP of government expenditures on goods and services, the lower the level of autonomous private demand and the absolute value equal to a given variation (in per cent) of this demand. Second, the larger the proportion of GNP represented by total government expenditures, the less importance the required compensatory discretionary measure has in proportion to the size of the government's budget.

The demonstration of the second proposition is just as simple as the first. Let us call α_T, α_R and $\alpha_G \geq 0$ the proportions of the disturbance in autonomous private demand (ΔD_0) that are counterbalanced by the changes made in the autonomous level of

income taxes (ΔT_0), the autonomous level of transfers (ΔR_0) and in the level of expenditures on goods and services (ΔG), i.e.:

$$(9)\quad \alpha_T \Delta D_0 = \delta \Delta T_0$$
$$\alpha_R \Delta D_0 = -\delta \Delta R_0$$
$$\alpha_G \Delta D_0 = -\Delta G_0$$

where $\alpha_T + \alpha_r + \alpha_G = 1$. These discretionary measures cancel each other out exactly, since they make $\Delta Y = 0$ when entered in (6). Their importance in the budget is, by definition, equal to their total impact on the budget balance; based on (9), this gives us:

$$(10)\quad \Delta S = \Delta T_0 - \Delta R_0 - \Delta G = k\, \Delta D_0,$$

where $k = \alpha_T \delta^{-1} + \alpha_R \delta^{-1} + \alpha_G$. Thus, for a one percentage point variation in autonomous private demand, the importance of the measures in the total budget is given by:

$$(11)\quad \frac{\Delta S/\beta}{\Delta D_O/D_O} = kD_O/\beta = k(1-\delta)(1-\gamma)/\beta,$$

where $\gamma = G/Y$, $\beta = \beta/Y$, β is a measure of the size of the total budget and where (8) has been entered in (10), assuming that the budget is initially in equilibrium in order to simplify matters. The right side of equation (11) is in fact a decreasing function of the share of public expenditures on goods and services in GNP (γ) and of the relative size of the total budget (β). The practical implications of this result lie in the fact that, for political as well as economic reasons, governments are generally less reticent to make minor rather than major changes in the parameters of their budgets.[2]

Historical Assessment of the Two Propositions

From the standpoint of cyclical stability of the economy, a sharp increase in expenditures on goods, services and transfers sensitive to the cycle, financed primarily through an equally large increase in personal and corporate income taxes, thus appeared very desirable to the central government at the end of the Second World War.[3] In fact, as Table 1 indicates, total federal expenditures rose from about 8 per cent of GNP in 1939 to a fairly stable proportion of 17 per cent in the 1950s and 1960s. Total federal expenditures subsequently rose to 21 per cent of GNP over the last decade. In turn, federal expenditures on goods and services rose from an initial 4 per cent of GNP in 1939 to 8.5 per cent in 1955, but fell to 6 per cent in 1963. By 1979, they had declined to 5 per cent of GNP. Direct income taxes accounted for only one third of federal receipts in 1939, but the proportion rose to 60 per cent in the 1950s. They have since remained stable at this level. Direct federal income taxes as a proportion of GNP rose from 2.5 per cent in 1939 to 10 per cent in the 1950s where they have remained. Finally, federal transfers, primarily to individuals and provinces, grew from 27 per cent of total federal expenditures and 2 per cent of GNP in 1939 to 60 and 12 per cent, respectively, in 1979. These payments are especially, but not exclusively, sensitive to the cycle because of unemployment insurance benefits, which rose from 0.6 per cent of GNP in 1968 to 2.0 per cent in 1978.

TABLE 1

Evolution of the Level and the Structure of the Federal Government's Revenues and Expenditures, 1939, 1955, 1968 and 1979

	1939		1955		1968		1979	
1. Revenues	millions $	%	millions $	%	millions $	%	millions $	%
Direct taxes, persons	52	11.4	1647	33.4	5125	42.6	19809	46.2
Direct taxes, corporate enterprises	98	21.5	1248	25.3	2107	17.5	7166	16.7
Indirect taxes	310	68.1	1743	35.4	3761	31.3	10661	24.9
Other revenues[a]	-5	-1.0	288	5.9	1034	8.6	5195	12.1
Total	455	100.0	4926	100.0	12027	100.0	42831	100.0
Revenue/GNP		8.1		17.3		16.6		16.5
2. Expenditures								
Current expenditure on goods & services[b]	164	35.9	2282	48.3	3692	30.7	11890	22.9
Gross capital formation	35	7.7	162	3.4	500	4.2	1047	2.0
Transfer payments to persons	56	12.3	1229	26.0	3295	27.4	14650	28.2
Federal-Provincial transfers	79	17.3	443	9.4	2280	18.9	11419	22.0
Other transfers[c]	-11	-2.4	487	2.6	862	7.2	4876	9.4
Interest on the public debt	134	29.3	121	10.3	1409	11.7	8080	15.5
Total	457	100.0	4724	100.0	12038	100.0	51962	100.0
Expenditures/GNP		8.1		16.6		16.6		20.0

Source: Statistics Canada, Gross National Products Division, Cat. 12-201 and 13-531.

a "Other revenues" include investment income, other current transfers from persons and the direct taxes of non-residents.
b Excludes capital consumption allowances.
c Includes the subsidies, capital assistance and transfers to local governments.

The historical information contained in Table 1 allows us to conclude that the stabilizing ability of the federal budget has steadily grown over the last four decades in terms of both the automatic and discretionary aspects of its regulating role. Between the end of the 1930s and the middle of the 1950s, this conclusion is quite clear. Marginal taxation and transfer rates, the weight of federal purchases of goods and services in GNP and the size of total federal expenditures and revenues as a proportion of GNP all increased substantially over this period. The conclusion can also be supported by observations since 1955, despite the appearance of a countercurrent in the trend of federal expenditures on goods and services. The relative decline in the latter component has itself driven up the share of non-federal demand in GNP, thus weakening the federal government's automatic and discretionary regulating abilities. However, the considerable strength of transfers to individuals and other levels of government has largely dominated the decline in federal expenditures on goods and services for two reasons. First, because it has created a strong increase in marginal transfer rates which, through the compression it has produced in the value of the traditional multiplier, supports the automatic stabilizing aspect of the federal budget. Second, because it has pushed the size of the total federal budget in the economy to unprecedented levels, thus increasing the importance and diversity of the possible discretionary intervention measures and reducing their required size as a proportion of the budget.

The preceding historical discussion of the 1955-79 period can be translated into figures as follows. First, (8) is inserted into (7) after assuming, to simplify matters, that the budget is at full-employment equilibrium and taking into account the definitions of μ and γ, giving us:

$$(12) \quad \varepsilon(Y,D_0) = \frac{(1-\delta)(1-\gamma)}{1-\delta(1-\tau-\rho)} .$$

Between 1955 and 1979, γ dropped from 8.5 to 5 per cent, but $\tau + \rho$ rose by at least 5 percentage units,[4] with the result that the net effect on the elasticity $\varepsilon(Y,D_0)$ is uncertain <u>a priori</u>. The log-linear approximation of the elasticity is:

$$(13) \quad \Delta \ln \varepsilon = - \frac{\Delta\gamma}{1-\gamma} - \mu\delta\Delta(\tau+\rho) \approx - 0.01 ,$$

if we take $\delta = 0.6$ and $\mu = 1.5$. The greater cyclical sensitivity of the federal budget, due primarily to the greater weight of elastic transfers, thus appears to have dominated the relative decline in federal expenditures on goods and services and to have increased the automatic regulatory function of the federal budget.

Similarly, the logarithmic differentiation of equation (11) in relation to γ and β gives a net approximate effect equal to:

$$(14) \quad - \frac{\Delta\gamma}{1-\gamma} - \frac{\Delta\beta}{\beta} \approx - 0.15.$$

The increase in the total budget (β increasing from 16.6 to 20.0 per cent) has clearly dominated the decline in expenditures on goods and services, thus facilitating the task of discretionary regulation.[5]

The improvement in the federal budget's technical ability to stabilize output, income and employment, when faced with continuing disturbances in total demand, also extends to its ability to alter price patterns and deal squarely with domestic and foreign disturbances affecting total supply (price shocks in food, energy, traded goods, etc.). First, governments influence prices primarily through demand management, by sliding along the Phillips curve. Second, they also use demand management to determine what fraction of a disturbance in total supply results in a variation in employment, and what fraction causes a variation in prices. Thus the approach remains relevant in the context of the 1970s and 1980s, with their new levels of inflation and their multiplication of distortions of total supply.

Apprehensions Raised by the Growth of Provincial Budgets

The preceding analysis remains incomplete for a very simple reason. By placing the non-federal sector (including the provinces) in the private sector, we have ignored the rapid growth of provincial budgets since the mid-1950s and its effect on the non-federal sector's marginal propensity to spend. In

formal terms, we have ignored the variations of δ in equations (7), (8) and (11) and have considered only the changes in the federal parameters τ, ρ, β and γ.

Table 2 reveals that since the 1950s total provincial expenditures, which had previously remained stable at about 6 per cent of GNP, began to grow very rapidly. The surge was in education , health, social security and municipal subsidies. By 1968, provincial expenditures had risen to 14 per cent of GNP. Recently they reached 19 per cent of GNP. Provincial expenditures on goods and services represented 3 per cent of GNP in 1955 (the same as in 1939), 7 per cent in 1968 and 9 per cent in 1979. An increased presence in the field of direct income taxes and an increase in federal transfers to the provinces were the major sources of financing this growth. The proportion of provincial receipts obtained from direct income taxes rose from 15 per cent in 1955 to 33 per cent in 1979.

The rapid growth of total provincial expenditures on goods and services, and particularly the provinces' increasing use of direct income taxes, raised some concern at the federal level in the early 1960s. These concerns were stated clearly in the Report of the Royal Commission on Taxation (the Carter Commission) in 1966. While recognizing that the behaviour of provincial budgets had not been a destabilizing influence in the past, the Carter Commission report expressed the opinion that it might become so. This could occur if provincial expenditures continued to displace federal expenditures and continued to be

TABLE 2

Evolution of the Level and the Structure of the Provincial Governments' Revenues and Expenditures,[a] 1939, 1955, 1968 and 1979

	1939		1955		1968		1979	
1. Revenues	millions $	%	millions $	%	millions $	%	millions $	%
Direct taxes, persons	62	16.7	208	11.9	2194	21.9	13241	26.8
Direct taxes, corporate enterprises	17	4.6	62	3.6	745	7.5	3205	6.5
Indirect taxes	155	41.7	762	43.7	3447	34.5	12111	24.5
Federal-Provincial transfers	79	21.2	443	25.4	2280	22.8	11419	23.1
Other revenues[b]	59	15.8	267	15.4	1332	13.3	9411	19.1
Total	372	100.0	1742	100.0	9998	100.0	49387	100.0
Revenue/GNP		6.6		6.1		13.8		19.0
2. Expenditures								
Current expenditure on goods & services[c]	111	25.1	478	27.9	3937	39.2	19693	40.8
Gross capital formation	74	16.7	351	20.5	1175	11.7	3509	7.3
Transfer payments to persons	150	33.9	449	26.2	2030	20.2	9079	18.8
Other transfers[d]	33	7.4	343	20.0	2403	23.9	12348	25.6
Interest on the public debt	75	16.9	93	5.4	507	5.0	3655	7.6
Total	443	100.0	1714	100.0	10052	100.0	48284	100.0
Expenditures/GNP		7.9		6.0		13.8		18.5

Source: Statistics Canada, Gross National Products Division, Cat. 13-201 and 13-531.

a The provincial sector includes the hospital sector, but excludes local governments.
b "Other revenues" include investment income, other current transfers from persons and current transfers from local governments.
c Excludes capital consumption allowances.
d Excludes subsidies, capital assistance and transfers to local governments.

financed by sources of revenue as sensitive to the business cycle as direct income taxes.[6] The Report claimed that such a situation would make provincial expenditures more destabilizing than private expenditures and would complicate the federal government's stabilizing task.

Similar apprehensions were expressed by the federal Minister of Finance, Mitchell Sharp, in a presentation to the Federal-Provincial Tax Structure Committee in September 1966. On the subject of the link between personal income tax and regulation of the economy, the minister was categorical:

> "This tax, too, is one of the central instruments for regulating total demand in the economy, and Canadian governments must not allow total federal income taxes to be abated so much that they can no longer be used for this purpose. This means that the Federal Government must maintain a strong position in this field, despite the pressure it will continue to face for reducing its share in favour of the provinces."[7]

Continuing, the minister explained that 50 per cent marked the lowest acceptable level for the federal share of personal income tax.[8]

The Carter Report, Mr. Sharp's presentation, and the interpretations often given them, are not devoid of confusion about the nature of the problem posed by the growth of provincial budgets for economic policy. The difficulty is not that provincial budgets have grown faster than the federal budget. Total provincial expenditures have not displaced total federal

expenditures. In fact, recent budget history has strengthened rather than weakened the stabilizing properties of the federal budget. The central issue is instead whether the displacement of private expenditures by provincial expenditures and increased provincial financing through direct income taxes have strengthened or weakened the cyclical stability of the economy. Obviously, the solution to this problem appears less pressing now than 20 years ago: our awareness of the effectiveness of monetary policy, since the end of the 1950s, now gives fiscal policy a smaller role in economic policy and the myths of fine-tuning and of the omnipotence of fiscal policy have fortunately been shattered. Budgets still remain a major instrument of economic regulation and those opposed to further decentralization in the Canadian federation, continue to cite the conflict (real or apparent) between budget stabilization decentralization and effective stabilization. Seen from this angle, the question of the cyclical impact of the growth of provincial governments and the proportion of their budgets financed by direct income taxes, raised 15 years ago by the Carter Report, continues to be very topical; but still lacks a good, clear answer.

Size of Provincial Budgets and Intrinsic Stability of the Economy

Our approach to the problem is to generalize the simple model developed above by explicitly introducing the taxation functions (income taxes, minus transfers to the private sector),

provincial expenditure functions and the function of federal transfers to the provinces. The generalized (constant price) model is composed of the following functions:

(15) $D = D_0 + \delta Y_d$ (total private demand function)

(16) $Y_d = Y - T_F - T_p$ (definition of private disposable income)

(17) $T_F = T_1 + \tau_1 Y$ (federal net taxation function)

(18) $T_p = T_2 + \tau_2 Y$ (provincial net taxation function)

(19) $F = F_0 - \phi Y$ (federal-provincial transfer function)

(20) $G_p = G_p^* + (1-\alpha)(\tau_2 - \phi)(Y - Y^*)$ (provincial expenditures on goods and services function)

(21) $Y = D + G_F + G_p$ (goods and services market equilibrium)

where:

D = total private demand

δ = marginal propensity to spend of the private sector

Y_d = private disposable income

Y = national income

T_F = net federal income tax

T_p = net provincial income tax

τ_1, τ_2 = net marginal taxation rates, federal and provincial

ϕ = federal-provincial marginal transfer rate

F = federal-provincial transfers

G_F = federal expenditures on goods and services

G_p = provincial expenditures on goods and services

G_p^* = provincial full-employment expenditures on goods and services

Y^* = national full-employment income

α = provincial propensity to stabilize the economy

D_0, T_1, T_2, F_0 = autonomous levels of respective functions.

The model contains 7 equations that determine the 7 endogenous variables D, Y_d, Y, T_F, T_p, F and G_p. To be concise, the functions for taxation and transfers to the private sector have been subtracted from each other to give us the net taxation functions. In addition, we have excluded the partial control exercised by provincial governments on the parameters of the function for federal transfers through shared-cost programs such as the Canada Assistance Plan.

The function for provincial expenditures on goods and services (equation 20) produces elementary parameters of provincial cyclical behaviour when national income shifts from its full-employment level $(Y-Y^* \neq 0)$. The development of these parameters, based on the various possible values of α, characterizes the provincial propensity to stabilize, or their propensity to adopt deficit budgets in periods of recession and surplus budgets in periods of growth. If $\alpha = 1$ in (20), expenditures on goods and services are not adjusted downward (or upward) when net income taxes decrease (or increase) due to a recession (or period of growth). The provinces are therefore

involved purely in automatic stabilization and their budget balance (S_p), assumed to be at full-employment, follows a procyclical path given by the equation:

$$(22)\quad S_p = T_p + F - G_p = (\tau_2 - \phi)(Y - Y^*),$$

given (17), (18), (19) and the equation:

$$(23)\quad G_p^* = T_p^* + F^* = T_2 + F_0 + (\tau_2 - \phi)Y^*.$$

Conversely, if $\alpha = 0$ in (20), the provinces decrease (or increase) their expenditures on goods and services by the exact amount required, indicated by (22), to eliminate the deficit (or surplus) in the budget created by the recession (or growth): they are following the procyclical policy of a balanced budget without regard to the cyclical situation. If $0 < \alpha < 1$, the behaviour of provincial expenditures is partially stabilizing but still procyclical. If, however, $\alpha > 1$, it becomes contracyclical and reflects an active commitment to cyclical regulation that extends beyond pure automatic stabilization.

The equilibrium value of national income resulting from equations (15) to (21) is equal to:

$$(24)\quad Y = \mu\,[D_0 - \delta(T_1 + T_2) + G_F + G_p^* - (1-\alpha)(\tau_2 - \phi)Y^*],$$

where $\mu = [1-\delta(1-\tau_1-\tau_2) - (1-\alpha)(\tau_2-\phi)]^{-1}$ is the Keynesian multiplier. The elasticity of national income in relation to autonomous private demand is obtained by performing the calculation indicated by equation (7). Equation (8), however, is now written:

$$(25) \quad D_0/Y = (1-\delta)(1-\tau_1-\tau_2) + \delta\, S/Y,$$

where S is the consolidated budget balance for the public sector and γ_1 and γ_2 are the shares of federal and provincial expenditures on goods and services in GNP respectively. Assuming that $S=0$ at full employment, the substitution of (25) and the new value of μ in (7) produce:

$$(26) \quad \varepsilon(Y,D_0) = \frac{(1-\delta)\,(1-\gamma_1-\gamma_2)}{1-\delta(1-\tau_1-\tau_2) - (1-\alpha)(\tau_2-\phi)} .$$

This expression first demonstrates that the more provincial expenditures on goods and services displace private expenditures (an increase in γ_2 for a given γ_1), the less national income is sensitive to disturbances in autonomous private demand. It also reveals that the economy's degree of automatic stability depends on the cyclical sensitivity of net provincial income taxes (τ_2) and of federal transfers to the provinces (ϕ), as well as on the provinces' own propensity to stabilize (α).

Any increases in ϕ, such as those produced by implementation of the federal Equalization program or the Canada Assistance Plan, reinforce the economy's self-stabilizing ability (a decline in

$\epsilon(Y,D_0)$) provided provincial expenditures follow a procyclical path ($\alpha < 1$).[9] An increase in α obviously produces the same result. However, ceteris paribus, an increase in the cyclical sensitivity of net provincial income taxes that accompanies an increase in the importance of direct income taxes in provincial revenues, for example, has an unclear effect a priori on the stability of the economy. First, this measure reduces the private sector's marginal propensity to spend ($\delta(1-\tau_1-\tau_2)$) and thus constitutes a stabilizing factor since it lowers the value of the multiplier. Second, it accentuates the magnitude of cyclical fluctuations in provincial budget balances and, to the extent that the provinces behave procyclically ($\alpha < 1$), it raises the value of the multiplier. The net effect of a variation of one in τ_2 on the non-federal sector's marginal propensity to spend ($\delta(1-\tau_2) + (1-\alpha)(\tau_2-\phi)$) is therefore equal to $1-\alpha-\delta$. An increase in τ_2 will therefore increase the stability of the economy if this expression is negative, i.e. if $\alpha + \delta > 1$. Since $\delta = 0.6$ approximately for the Canadian economy, there is a critical value of the provinces' propensity to stabilize, here equal to $\alpha = 1-0.6 = 0.4$, beyond which a rise in τ_2 improves economic stabiltiy. It is therefore incorrect to state without qualification that an increase in the importance of direct income taxes in provincial receipts is a destabilizing element at the macroeconomic level, even if the behaviour of provincial budgets is procyclical. Everything depends on the value of the parameter α, which can only be determined through empirical analysis. The only recent study throwing any light on this matter is that by Lacroix, Rabeau and Assayag, who found no

statistical sensitivity of provincial expenditures to the cycle over three periods: 1952-65, 1966-71 and 1972-76.[10] From equation (20), this would mean that α is almost equal to one, and an increase in τ_2 would therefore be stabilizing. It would also mean that a simple transfer of personal or corporate income tax points from Ottawa to the provinces, accompanied by an equivalent transfer of spending responsibilities, would have no real consequences on the cyclical stability of the economy, since the measure would keep constant the values of $\gamma_1 + \gamma_2$ and $\tau_1 + \tau_2$ in equation (26).

Thus, to the best of our theoretical and empirical knowledge, the issue raised by the Carter Report 15 years ago can be answered in three statements:

1) the displacement of private expenditures by provincial expenditures on goods and services has improved the economy's ability for self-stabilization;
2) the growing financing of provincial expenditures through direct taxes has also probably increased the intrinsic stability of the economy;
3) an equivalent transfer of tax resources and spending responsibilities from the federal level to the provinces probably leaves intact the economy's sensitivity to disturbances in total demand.

Size of Provincial Budgets and Ease of Federal Intervention

Has the growth in provincial budgets at the expense of the private sector altered the ease of federal discretionary intervention in cyclical regulation? By analogy with equation (11), we discover immediately that for a given percentage variation in autonomous private demand, the importance in the total federal budget of any federal discretionary measure with a perfectly compensatory effect on national income is equal to:

$$(27) \quad \frac{\Delta S_F/B_F}{\Delta D_0/D_0} = (1-\delta)(1-\gamma_1-\gamma_2)/\beta,$$

where S_F = the federal budget balance and B_F = the size of the federal budget. Equation (27) reveals that the displacement of private expenditures by the expansion of the provinces improves the federal government's discretionary ability to stabilize the economy.

Furthermore, if the central government considers all non-federal autonomous demand:

$$(28) \quad D_1 = D_0 - \delta T_2 + G_p^* - (1-\alpha)(\tau_2-\phi)Y^*$$

as the source of cyclical disturbances requiring stabilizing intervention, equation (27) is identical to equation (26) and we can conclude that the increase in provincial budgets has had no effect on federal power of discretionary regulation of the

economy. It is nonetheless clear that continuing federal-provincial consultation on the status and needs of the economy can greatly facilitate the federal authorities' task by more directly involving both levels of government in stabilization of the economy. In particular, any partial compensation for the variations of D_0 by opposite variations in T_2 or G_p^* proportionally reduces the scope of federal discretionary measures (variations in T_1 or G_F) required. This forms the basis for intergovernmental cooperation in regulating the cycle. It is important to note, however, that lack of cooperation does not change <u>a priori</u> the conclusion that the growth in provincial budgets does not make Ottawa's job of discretionary intervention any harder. For the latter to occur, the instability of expenditures and autonomous provincial income taxes (T_2 and G_p^*) would have to be greater than that of autonomous private demand (D_0). This condition runs counter to our observations.

Finally, a transfer of tax resources from the federal level to the provinces accompanied by a corresponding transfer of spending responsibilities leaves unchanged the public sector's consolidated share of expenditures on goods and services in GNP ($Y_1 + Y_2$). Consequently, it does not change the absolute amount of federal discretionary intervention required by the economic situation. However, since the federal budget has been reduced (drop in B_F), the relative importance of the intervention is increased and could, in some circumstances, make the central government more hesitant to introduce the appropriate

measures.[11] It all depends, in fact, on what type of spending responsibilities are decentralized. If they are very flexible and normally form part of the federal government's arsenal of cyclical weapons, such as capital expenditures, the decentralization will cut into the federal government's budget flexibility -- or "room for manoeuvre" -- and its ability to undertake discretionary intervention. The impact on economic stability will depend crucially on the provinces' will to fill in for the federal government and use this instrument for cyclical regulation. If, on the other hand, the expenditures are fairly inflexible and recurrent, such as those dealing with financing of Established Programs Financing and the Canada Assistance Plan, the decentralization should not restrict the flexibility of the federal budget for cyclical purposes. This line of reasoning also reveals that, in principle, the denominator of equations (11) and (27) should be equal to the federal budget's flexibility in proportion to GNP -- if such a concept could be accurately developed -- rather than to the relative importance of the total federal budget in the economy.

Conclusion

This text has examined the relationships between the size of the federal and provincial budgets, the economy's ability to stabilize itself and the federal government's ease of discretionary intervention. Three major conclusions emerge from our analysis.

First, the tendency of the total budget to grow as a proportion of GNP, and the increase in the marginal rate of taxation and transfers at the federal level have increased the intrinsic stability of the economy. They have also reduced the importance in the federal budget of discretionary measures required for economic stability despite the drop in federal expenditures on goods and services over the last 25 years.

Second, the even faster growth of provincial expenditures as a proportion of GNP, and their increased financing through direct income taxes have reinforced rather than weakened the cyclical stability inherent in the economy and have facilitated the federal government's task of discretionary stabilization policy. Provincial expenditures have shown no systematic or significant sensitivity to the swings of the business cycle.

Third, the transfer of tax fields from Ottawa to the provinces in exchange for the provinces taking on more spending responsibilities essentially has no effect on the cyclical stability of the economy. If the decentralization involves fairly inflexible expenditures, such as those for Established Programs Financing or the Canada Assistance Plan, the cyclical flexibility of the federal budget will hardly be affected. In the case of more flexible expenditures, such as capital spending, the federal budget's cyclical flexibility is reduced, thus requiring greater intergovernmental cooperation in cyclical regulation.

FOOTNOTES

1 The constant prices hypothesis, which may seem strange at first, does not distort the results obtained subsequently. It does not imply that prices do not change in reality, but instead considers the phenomenon of inflation as exogenous to the determination of the quantities. In the short term, prices affect the quantities through private autonomous demand (D_o) and the quantities have only a negligible effect on prices.

2 This is true because any cyclical budget measure also affects economic efficiency, income distribution and productivity. On the political level, it must be remembered that it is much easier to cut then raise taxes. For example, the major "cyclical" cut in personal income taxes introduced in 1973 is still in effect today.

3 This was not the only reason for the expansion of the federal budget. Interest in developing a welfare state based on national standards became possible with the economic and political weakening of the provinces (caused by the great depression and the war) and the federal government's stronger financial base.

4 This is primarily a result of the tendential drift imposed on τ by the real progressivity of the tax system and of the sharp rise in ρ caused by the increased generosity of the Unemployment Insurance Act following the 1971 revision. The 1972 tax reform and indexation of personal income tax since 1974 have not altered τ or the intrinsic stability of the economy.

5 The analysis makes the implicit assumption that δ remained constant over the period studied. In fact, the 1960s and 1970s undoubtedly witnessed increases in the marginal propensities to import and to save, which accentuated the drop in $\varepsilon(Y, D_o)$ and in $\frac{\Delta S/B}{\Delta D_o/D_o}$. The growth of the provincial sector also changed the value of δ. The following section will discuss this matter.

6 Canada. Royal Commission on Taxation. Report of the Royal Commission on Taxation, Volume 2 (Ottawa: Queen's Printer, 1966), pp. 93-4.

7 Canada. "Statement by the Honourable M.W. Sharp, Minister of Finance of the Government of Canada, to the Federal-Provincial Tax Structure Committee", in Federal-Provincial Tax Structure Committee, Ottawa, September 14 and 15, 1966 (Ottawa: Queen's Printer, 1966), p. 25.

8 Ibid., p. 26. This position was hotly contested by the Government of Ontario; see Ibid., pp. 38-9. Ontario's opinion is largely based on the thorough analysis of the problem of tax sharing conducted by T.M. Russell, "Some Notes on Alternative Methods of Transferring Federal Tax Revenues to the Provinces", Unpublished (Ontario Department of Economics and Development,

August 1966), pp. 8-13. It should be stressed that one of the federal government's major concerns is the political consequences of the near-irreversibility of fiscal decentralization.

9 This obviously gives us $\tau_2 > \phi$.

10 Robert Lacroix, Yves Rabeau and Abraham Assayag, "La stabilisation économique et les régions: le problème canadien", Research Report submitted to the Economic Council of Canada, CRDE, University of Montreal, August 1978, pp. 53-60 and 175-8. This study confirms the earlier verdict of T. Russell Robinson and Thomas J. Courchêne, "Fiscal Federalism and Economic Stability: An Examination of Multi-Level Public Finances in Canada, 1952-1965", Canadian Journal of Economics, Vol. 2 (May 1969), pp. 165-89.

11 For the reasons given in footnote 2, for example.